

6. The method of Claim 1, wherein exposing the semiconductor device to a treatment process comprises:

exposing the semiconductor device to a substantially inert atmosphere; and

5 heating the semiconductor device to between 300 and 800 degrees Celsius to remove the compound.

7. The method of Claim 1, further comprising providing a barrier layer between the conductive material
10 and a substrate of the semiconductor device.

8. The method of Claim 1, wherein the conductive material comprises a copper material, and wherein exposing the semiconductor device to a plasma comprises
15 exposing the semiconductor device to a chlorine-containing gas.

9. The method of Claim 8, wherein the compound comprises a copper chloride material, and wherein
20 exposing the semiconductor device to a treatment process comprises exposing the semiconductor device to a hydrogen chloride solution to remove the copper chloride material.

10. The method of Claim 1, wherein the mask layer
25 comprises a photoresist material.

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11. A method for forming a conductive pattern for an electronic device, comprising:

forming a conductive layer outwardly from a substrate of the electronic device;

5 patterning a mask layer outwardly from the conductive layer, the patterning defining portions of the conductive layer where vias through the conductive layer are desired;

10 exposing the electronic device to a plasma, the plasma converting the unmasked portions of the conductive layer into a compound;

 exposing the electronic device to a treatment process to selectively remove the compound; and

15 removing the mask layer from the masked portions of the conductive layer.

12. The method of Claim 11, wherein removing the mask layer comprises removing the mask layer before removing the compound.

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13. The method of Claim 11, wherein forming a conductive layer comprises forming a copper layer outwardly from the substrate.

25 14. The method of Claim 11, wherein exposing the electronic device to a plasma comprises exposing the electronic device to a plasma, the plasma comprising a gas having an element selected from the halogen group of elements.

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Figure 1 consists of 12 histograms arranged horizontally, labeled x_1 through x_{12} . Each histogram shows the frequency (count) of values for x_k ranging from 0 to 10. The distributions are approximately normal, centered at 5. The peak frequency increases from 10 for x_1 to 10 for x_{12} , with some fluctuations in the tails.

Figure 1 consists of 12 histograms arranged horizontally, labeled x_1 through x_{12} . Each histogram shows the frequency (count) of values for x_k ranging from 0 to 10. The distributions are unimodal and shift to the right as k increases. The peak count for x_1 is 10, and it decreases to 1 for x_{12} .

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23. The method of Claim 22, wherein the plasma comprises a chlorine-containing gas.

24. The method of Claim 22, wherein the plasma
5 comprises a bromine-containing gas.

25. The method of Claim 22, wherein the plasma comprises a fluorine-containing gas.

10 26. The method of Claim 22, wherein the plasma comprises an iodine-containing gas.

27. The method of Claim 18, wherein exposing the electronic device to a plasma comprises controlling the
15 exposure of the electronic device to the plasma to form a substantially perpendicular interface between the masked conductive material and the compound.

28. The method of Claim 18, wherein the conductive
20 layer comprises a copper material.

29. The method of Claim 28, wherein exposing the electronic device comprises exposing the electronic device to a plasma, the plasma comprising a chlorine-
25 containing gas, the plasma converting the unmasked portion of the conductive layer to copper chloride.

30. The method of Claim 29, wherein exposing the electronic device to a treatment process comprises
30 exposing the electronic device to a hydrogen chloride solution to remove the copper chloride.

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